Program Alat Pemilah Pecahan Uang Kertas Menggunakan *TCS3200*
Berbasis Arduino Mega2560

```
#include <Servo.h>
#include <Wire.h>
#include <LiquidCrystal_I2C.h>

Servo myservo;
#define I2C_ADDR 0x3F // <<- Add your address here.
#define Rs_pin 0
#define Rw_pin 1
#define En_pin 2
#define BACKLIGHT_PIN 3
#define D4_pin 4
#define D5_pin 5
#define D6_pin 6
#define D7_pin 7

LiquidCrystal_I2C
lcd(I2C_ADDR,En_pin,Rw_pin,Rs_pin,D4_pin,D5_pin,D6_pin,D7_pin);

#define S0 8
#define S1 9
#define S2 10
#define S3 11
#define sensorOut 12
int frequency = 0;
int red = 0;
int green = 0;
int blue = 0;
String inputString = "";
```

```
int count1=0,count2=0,count3=0;

//button
int buttonPin = 2;            // membuat variabel buttonPin untuk pin 2
int buttonPin1=3;
int  buttonState = 0;          // variabel untuk posisi awal button agar dibaca
LOW
int buttonstate1=0;
int buttonPin2=4;
int buttonstate2=0;

void setup() {
  Serial.begin(9600);
  Wire.begin();

  pinMode(S0, OUTPUT);
  pinMode(S1, OUTPUT);
  pinMode(S2, OUTPUT);
  pinMode(S3, OUTPUT);
  pinMode(sensorOut, INPUT);

  // Setting frequency-scaling to 20%
  digitalWrite(S0,HIGH);
  digitalWrite(S1,LOW); //LOW
  myservo.attach(7);
  myservo.write(90);
  lcd.begin (16,2); // <<-- our LCD is a 16x2, change for your LCD if
needed
 // LCD Backlight ON
 //lcd.setBacklightPin(BACKLIGHT_PIN,POSITIVE);
//lcd.setBacklight(HIGH);
```

```
  pinMode (BACKLIGHT_PIN,OUTPUT);
  digitalWrite (BACKLIGHT_PIN,HIGH);

  lcd.home (); // go home on LCD
  lcd.setCursor (0,0);
  lcd.print(" Money Counter ");
  lcd.setCursor (0,1);
  lcd.print("== POLSRI ==");
  delay(1000);
// button
pinMode(buttonPin, INPUT);
pinMode (buttonPin1, INPUT);
}

void loop() {
  color();
  lcd.clear();
  lcd.setCursor (0,0);
  lcd.print(" Pecahan Uang");
  lcd.setCursor (0,1);
  lcd.print("100=");lcd.print(count1);lcd.print("
50=");lcd.print(count2);lcd.print(" 10=");lcd.print(count3);

  if (red >30 && red <50 & green>23 && green<50 & blue>30 &&
blue<50){
    myservo.write(45);
    count1=count1+1;
    Serial.print("seratus ribu rupiah");
    delay(4000);
    //delay (9000) lambat
  }
```

```
  else if (red >40 && red <60 & green>20 && green<43 & blue>50 &&
blue<60){
    myservo.write(90);
    count2=count2+1;
    Serial.print("Lima Puluh Ribu Rupiah");
    delay(3000);
    //delay (7000) lambat
  }
  else if (red >54 && red <170 & green>30 && green<150 & blue>62 &&
blue<150){
    myservo.write(139);
    count3=count3+1;
    Serial.print("sepuluh ribu rupiah");
    delay(4000);
    //delay (7000) lambat
  }
button();
}

void color(){
  digitalWrite(S2, LOW);
  digitalWrite(S3, LOW);
  frequency=pulseIn(sensorOut, LOW);
  red=frequency;
  Serial.print("R=");
  Serial.print(red);
  Serial.print(" ");
  delay (100);
  digitalWrite(S2, HIGH);
  digitalWrite(S3,HIGH);
  frequency=pulseIn(sensorOut, LOW);
```

```
  green=frequency;
  Serial.print("G=");
  Serial.print(green);
  Serial.print(" ");
  delay(100);
  digitalWrite(S2, LOW);
  digitalWrite(S3, HIGH);
  frequency =pulseIn(sensorOut, LOW);
  blue=frequency;
  Serial.print("B=");
  Serial.print(blue);
  Serial.println(" ");
  delay(100);
}

void button() {
 buttonState = digitalRead(buttonPin);     // membuat variabel buttonState
 buttonstate1                    =                    digitalRead(buttonPin1);
// nilai dari buttonPin
 buttonstate2 = digitalRead(buttonPin2);

if (buttonState == HIGH) {         // Jika nilai buttonPin = HIGH
   myservo.write(139);
  }
  else if  (buttonstate1 == HIGH){                              // Jika tidak
  myservo.write(90);
}
else if  (buttonstate2 == HIGH){                              // Jika tidak
  myservo.write(45);
}
}
```